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* * * * * * * * * * Welcome to STN International * * * * * * * * *

NEWS 1 Web Page for STN Seminar Schedule - N. America
NEWS 2 DEC 01 ChemPort single article sales feature unavailable
NEWS 3 JUN 01 CAS REGISTRY Source of Registration (SR) searching enhanced on STN
NEWS 4 JUN 26 NUTRACEUT and PHARMAML no longer updated
NEWS 5 JUN 29 IMSCOPROFILE now reloaded monthly
NEWS 6 JUN 29 EPFULL adds Simultaneous Left and Right Truncation (SLART) to AB, MCLM, and TI fields
NEWS 7 JUL 09 PATPAFULL adds Simultaneous Left and Right Truncation (SLART) to AB, CLM, MCLM, and TI fields
NEWS 8 JUL 14 USGENE enhances coverage of patent sequence location (PSL) data
NEWS 9 JUL 27 CA/Cplus enhanced with new citing references
NEWS 10 JUL 16 GBFULL adds patent backfile data to 1855
NEWS 11 JUL 21 USGENE adds bibliographic and sequence information
NEWS 12 JUL 28 EPFULL adds first-page images and applicant-cited references
NEWS 13 JUL 28 INPADOCDB and INPAPAMDB add Russian legal status data
NEWS 14 AUG 08 Improve STN by completing a survey and be entered to win a gift card
NEWS 15 AUG 10 Time limit for inactive STN sessions doubles to 40 minutes

NEWS EXPRESS MAY 26 09 CURRENT WINDOWS VERSION IS V8.4,
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* name will be entered to win one of five \$20 Amazon.com gift cards. *
*
* See NEWS 14 for details or go directly to the survey at: *
* http://www.zoomerang.com/Survey/?p=WEB229H4S8Q5UL *

FILE 'HOME' ENTERED AT 13:12:34 ON 12 AUG 2009

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=> file caplus
COST IN U.S. DOLLARS                               SINCE FILE      TOTAL
                                                    ENTRY        SESSION
FULL ESTIMATED COST                           0.22          0.22
```

FILE 'CAPLUS' ENTERED AT 13:12:49 ON 12 AUG 2009
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FILE COVERS 1907 - 12 Aug 2009 VOL 151 ISS 7
FILE LAST UPDATED: 11 Aug 2009 (20090811/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2009

CPlus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2009.

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This file contains CAS Registry Numbers for easy and accurate substance identification.

The ALL, BIB, MAX, and STD display formats in the CA/Capplus family of databases have been updated to include new citing references information. This enhancement may impact record import into database management software. For additional information, refer to NEWS 9.

=> s US20080242900/pn
1.1 1 US20080242900/PN

10

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:811729 CAPLUS
DN 143:213353
TI Two-stage nitration method for producing dinitrotoluene from toluene
IN Buettner, Johannes; MacKenroth, Wolfgang; Hermann, Heinrich; Konieczny,
Peter; Gebauer, Juergen
PA BASF Aktiengesellschaft, Germany
SO PCT Int. Appl. 23 pp.

CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| PATENT NO. | | KIND | DATE | APPLICATION NO. | DATE |
|------------|--|--|----------|----------------------|--------------|
| PI | WO 2005075407 | A1 | 20050818 | WO 2005-EP1017 | 20050202 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG | | | | |
| DE | 102004005913 | A1 | 20050825 | DE 2004-102004005913 | 20040205 |
| EP | 1713756 | A1 | 20061025 | EP 2005-701305 | 20050202 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS | | | | |
| CN | 1918109 | A | 20070221 | CN 2005-80004228 | 20050202 |
| BR | 200507293 | A | 20070703 | BR 2005-7293 | 20050202 |
| JP | 2007520512 | T | 20070726 | JP 2006-551789 | 20050202 |
| US | 20080242900 | A1 | 20081002 | US 2006-586683 | 20060720 <-- |
| ZA | 2006007374 | A | 20080625 | ZA 2006-7374 | 20060904 |
| KR | 2006130203 | A | 20061218 | KR 2006-718074 | 20060905 |
| IN | 2006CN03216 | A | 20070706 | IN 2006-CN3216 | 20060905 |
| PRAI | DE 2004-102004005913 | A | 20040205 | | |
| | WO 2005-EP1017 | W | 20050202 | | |
| OS | CASREACT 143:213353 | | | | |
| OSC.G | 1 | THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS) | | | |
| RE.CNT | 4 | THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD | | | |
| | ALL CITATIONS AVAILABLE IN THE RE FORMAT | | | | |

| => file reg | COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---------------------|----------------------|------------------|---------------|
| FULL ESTIMATED COST | | 3.99 | 4.21 |

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STRUCTURE FILE UPDATES: 11 AUG 2009 HIGHEST RN 1173975-63-7
DICTIONARY FILE UPDATES: 11 AUG 2009 HIGHEST RN 1173975-63-7

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TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

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<http://www.cas.org/support/stngen/stndoc/properties.html>

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=> tra l1 1- rn  
L2          TRANSFER L1 1- RN :      8 TERMS  
L3          8 L2
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=> d 13
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L3 ANSWER 1 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 25321-14-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, methyldinitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, ar,ar-dinitro- (8CI)
OTHER NAMES:
CN Dinitrophenylmethane
CN Dinitrotoluene
CN Dinitrotoluol
CN DNT
CN Methyldinitrobenzene
DR 29656-15-3
MF C7 H6 N2 O4
CI IDS, COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS,
CASREACT, CBNB, CHEMCATS, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
DETERM*, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS,
PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL,
USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



D1-Me

2 [D1-NO₂]

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1137 REFERENCES IN FILE CA (1907 TO DATE)
19 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1142 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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=> d 13 1-  
YOU HAVE REQUESTED DATA FROM 8 ANSWERS - CONTINUE? Y/(N):Y
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L3 ANSWER 1 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 25321-14-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, methyldinitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, ar,ar-dinitro- (8CI)
OTHER NAMES:
CN Dinitrophenylmethane
CN Dinitrotoluene
CN Dinitrotoluol
CN DNT
CN Methylidinitrobenzene
DR 29656-15-3
MF C₇ H₆ N₂ O₄
CI IDS, COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS,
CASREACT, CBNB, CHEMCATS, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
DETERM*, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS,
PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL,
USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



D1-Me

2 [D1-NO₂]

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1137 REFERENCES IN FILE CA (1907 TO DATE)
19 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1142 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 7732-18-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Water (CA INDEX NAME)
OTHER NAMES:
CN Aquafina
CN Distilled water
CN DRIWATER
CN Hydrogen oxide (H₂O)
CN NSC 147337
CN R 718
CN Spa
CN Ultrex II Ultrapure

DR 558440-22-5, 558440-53-2
MF H₂O
CI COM
LC STN Files: ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CSCHEM, CSNB, DETHERM*, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL (*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

H₂O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

439590 REFERENCES IN FILE CA (1907 TO DATE)
1547 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
441011 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 7697-37-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Nitric acid (CA INDEX NAME)
OTHER NAMES:
CN Aqua fortis
CN Azotic acid
CN Fumic acid
CN Hydrogen nitrate
CN Nital
CN Nitric acid (HONO₂)
CN Nitryl hydroxide
CN NSC 147791
CN NSC 15203
DR 802862-59-5, 1053657-18-3, 78989-43-2, 218625-70-8
MF H N O₃
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPAT, ENCOMPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT, PS, RTECS*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU (*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

66579 REFERENCES IN FILE CA (1907 TO DATE)
2412 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
66859 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 7664-93-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN Sulfuric acid (CA INDEX NAME)
OTHER NAMES:
CN BOV
CN Brimstone acid
CN Contact acid
CN Dihydrogen sulfate
CN Dipping acid
CN NSC 248648
CN NSC 38965
CN Oil of vitriol
CN Ridolene 123
CN Sulphuric acid
CN Vitriol brown oil
DR 127529-01-5, 119540-51-1, 140623-70-7
MF H2 O4 S
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOSIS, BIOTECHNO, CA, CABA,
CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN,
CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,
ENCOMPAT, ENCOMPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER,
TULSA, ULIDAT, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

130341 REFERENCES IN FILE CA (1907 TO DATE)
5882 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
130875 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 1321-12-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, methylnitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, ar-nitro- (8CI)
OTHER NAMES:
CN Methylnitrobenzene
CN Mononitrotoluene
CN Nitrophenylmethane
CN Nitrotoluene
MF C7 H7 N O2
CI IDS, COM
LC STN Files: AGRICOLA, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CHEMLIST,
CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, EMBASE, ENCOMPLIT, ENCOMPLIT2,
ENCOMPAT, ENCOMPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS,

PROMT, RTECS*, TOXCENTER, TULSA, USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)



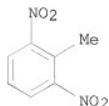
D1-Me

D1-NO₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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13 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
586 REFERENCES IN FILE CAPLUS (1907 TO DATE)

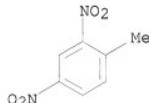
L3 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 606-20-2 REGISTRY
ED Entered STN: 16 Nov 1984
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OTHER CA INDEX NAMES:
CN Toluene, 2,6-dinitro- (8CI)
OTHER NAMES:
CN 1-Methyl-2,6-dinitrobenzene
CN 2,6-Dinitrotoluene
CN 2,6-DNT
CN 2-Methyl-1,3-dinitrobenzene
MF C₇ H₆ N₂ O₄
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN,
CSCHEM, CSNB, DETHERM*, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE,
MSDS-OHS, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2,
USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



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1613 REFERENCES IN FILE CA (1907 TO DATE)
21 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1621 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 121-14-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, 2,4-dinitro- (8CI)
OTHER NAMES:
CN 1-Methyl-2,4-dinitrobenzene
CN 2,4-Dinitrotoluene
CN 2,4-DNT
CN 4-Methyl-1,3-dinitrobenzene
CN 6-Methyl-1,3-dinitrobenzene
CN NSC 7194
MF C7 H6 N2 O4
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN,
CSCHEM, CSNB, DETHERM*, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB,
MEDLINE, MSDS-GHS, PIRA, PROMT, RIECS*, SPECINFO, TOXCENTER, ULIDAT,
USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

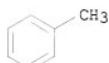


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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3338 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 108-88-3 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, methyl- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene (8CI)
OTHER NAMES:
CN 1-Methylbenzene
CN Antusal 1a
CN CP 25
CN CP 25 (solvent)
CN Methacide
CN Methylbenzene
CN Methylbenzol
CN NSC 406333
CN Phenylmethane
CN Toluol
DR 1053657-77-4

MF C7 H8
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS,
BIOTECHNO, CA, CABAB, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX,
CHEMLIST, CHEMSAFE, CIN, CSCHM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE,
ENCOMPLIT, ENCOMPLIT2, ENCOMPAT, ENCOMPAT2, GMELIN*, HSDB*, IFICDB,
IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PROMT,
PS, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2,
USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

103723 REFERENCES IN FILE CA (1907 TO DATE)
1029 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
104117 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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| => file caplus | SINCE FILE | TOTAL |
| COST IN U.S. DOLLARS | ENTRY | SESSION |
| FULL ESTIMATED COST | 20.85 | 40.64 |

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FILE COVERS 1907 - 12 Aug 2009 VOL 151 ISS 7
FILE LAST UPDATED: 11 Aug 2009 (20090811/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2009

Caplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2009.

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This file contains CAS Registry Numbers for easy and accurate

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=> file reg
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                ENTRY      SESSION
FULL ESTIMATED COST          0.50        41.14
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FILE 'REGISTRY' ENTERED AT 13:16:19 ON 12 AUG 2009
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STRUCTURE FILE UPDATES: 11 AUG 2009 HIGHEST RN 1173975-63-7
DICTIONARY FILE UPDATES: 11 AUG 2009 HIGHEST RN 1173975-63-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d his

(FILE 'HOME' ENTERED AT 13:12:34 ON 12 AUG 2009)

FILE 'CAPLUS' ENTERED AT 13:12:49 ON 12 AUG 2009
L1 1 S US20080242900/PN

FILE 'REGISTRY' ENTERED AT 13:13:10 ON 12 AUG 2009

FILE 'CAPLUS' ENTERED AT 13:13:18 ON 12 AUG 2009
L2 TRA L1 1- RN : 8 TERMS

FILE 'REGISTRY' ENTERED AT 13:13:18 ON 12 AUG 2009
L3 8 SEA L2

FILE 'CAPLUS' ENTERED AT 13:16:12 ON 12 AUG 2009

FILE 'REGISTRY' ENTERED AT 13:16:19 ON 12 AUG 2009

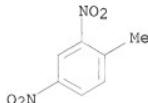
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L4 0 121-14-3

=> s 121-14-2
L5 1 121-14-2

(121-14-2/RN)

=> d

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
RN 121-14-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, 2,4-dinitro- (8CI)
OTHER NAMES:
CN 1-Methyl-2,4-dinitrobenzene
CN 2,4-Dinitrotoluene
CN 2,4-DNT
CN 4-Methyl-1,3-dinitrobenzene
CN 6-Methyl-1,3-dinitrobenzene
CN NSC 7194
MF C7 H6 N2 O4
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN,
CSCHEM, CSNB, DETHERM*, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB,
MEDLINE, MSDS-OHS, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT,
USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3327 REFERENCES IN FILE CA (1907 TO DATE)
37 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3338 REFERENCES IN FILE CAPLUS (1907 TO DATE)

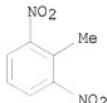
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L6 1 606-20-2
(606-20-2/RN)

=> d

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
RN 606-20-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, 2-methyl-1,3-dinitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, 2,6-dinitro- (8CI)
OTHER NAMES:
CN 1-Methyl-2,6-dinitrobenzene
CN 2,6-Dinitrotoluene
CN 2,6-DNT
CN 2-Methyl-1,3-dinitrobenzene

MF C7 H6 N2 O4
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA,
CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN,
CSCHEM, CSNB, DETHERM*, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE,
MSDS-OHS, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2,
USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1613 REFERENCES IN FILE CA (1907 TO DATE)
21 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1621 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> s 25321-14-6
L7 1 25321-14-6
(25321-14-6/RN)

=> d

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
RN 25321-14-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, methyldinitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, ar,ar-dinitro- (8CI)
OTHER NAMES:
CN Dinitrophenylmethane
CN Dinitrotoluene
CN Dinitrotoluol
CN DNT
CN Methylidinitrobenzene
DR 29656-15-3
MF C7 H6 N2 O4
CI IDS, COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS,
CASREACT, CBNB, CHEMCATS, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
DETERM*, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS,
PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL,
USPATOLD
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



D1-Me

2 [D1-NO₂]

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1137 REFERENCES IN FILE CA (1907 TO DATE)
19 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1142 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> s 1321-12-6
L8 1 1321-12-6
(1321-12-6/RN)

=> d

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
RN 1321-12-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, methylnitro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Toluene, ar-nitro- (8CI)
OTHER NAMES:
CN Methylnitrobenzene
CN Mononitrotoluene
CN Nitrophenylmethane
CN Nitrotoluene
MF C7 H7 N O2
CI IDS, COM
LC STN Files: AGRICOLA, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CHEMLIST,
CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, EMBASE, ENCOMPLIT, ENCOMPLIT2,
ENCOMPAT, ENCOMPAT2, HSDB*, IFICDB, IFIPAT, IFIUDE, MEDLINE, MSDS-OHS,
PROMT, RTECS*, TOXCENTER, TULSA, USPAT2, USPATFULL, USPATOLD
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)



D1-Me

D1-NO₂

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

584 REFERENCES IN FILE CA (1907 TO DATE)
13 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
586 REFERENCES IN FILE CAPLUS (1907 TO DATE)

| => file caplus | SINCE FILE | TOTAL |
|----------------------|------------|---------|
| COST IN U.S. DOLLARS | ENTRY | SESSION |
| FULL ESTIMATED COST | 14.51 | 55.65 |

FILE 'CAPLUS' ENTERED AT 13:17:37 ON 12 AUG 2009
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FILE COVERS 1907 - 12 Aug 2009 VOL 151 ISS 7
FILE LAST UPDATED: 11 Aug 2009 (20090811/ED)
REVISED CLASS FIELDS (NCL) LAST RELOADED: Jun 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2009

CAplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

The ALL, BIB, MAX, and STD display formats in the CA/CAplus family of databases have been updated to include new citing references information. This enhancement may impact record import into database management software. For additional information, refer

to NEWS 9.

=> d his

(FILE 'HOME' ENTERED AT 13:12:34 ON 12 AUG 2009)

FILE 'CAPLUS' ENTERED AT 13:12:49 ON 12 AUG 2009
L1 1 S US20080242900/PN

FILE 'REGISTRY' ENTERED AT 13:13:10 ON 12 AUG 2009

FILE 'CAPLUS' ENTERED AT 13:13:18 ON 12 AUG 2009
L2 TRA L1 1- RN : 8 TERMS

FILE 'REGISTRY' ENTERED AT 13:13:18 ON 12 AUG 2009
L3 8 SEA L2

FILE 'CAPLUS' ENTERED AT 13:16:12 ON 12 AUG 2009

FILE 'REGISTRY' ENTERED AT 13:16:19 ON 12 AUG 2009
L4 0 S 121-14-3
L5 1 S 121-14-2
L6 1 S 606-20-2
L7 1 S 25321-14-6
L8 1 S 1321-12-6

FILE 'CAPLUS' ENTERED AT 13:17:37 ON 12 AUG 2009

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 3338 L5
 4826579 PREP/RL
L9 209 L5/PREP
 (L5 (L) PREP/RL)

=> s 16/prep
 1621 L6
 4826579 PREP/RL
L10 123 L6/PREP
 (L6 (L) PREP/RL)

=> s 17/prep
 1142 L7
 4826579 PREP/RL
L11 151 L7/PREP
 (L7 (L) PREP/RL)

=> s 19 or l10 or l11
L12 368 L9 OR L10 OR L11

=> dup remov
ENTER L# LIST OR (END):l12
PROCESSING COMPLETED FOR L12
L13 368 DUP REMOV L12 (0 DUPLICATES REMOVED)

=> s 113 and 17
L14 368 S L13
 1142 L7
L15 153 L14 AND L7

=> s 115 and nitric
 225568 NITRIC
 3 NITRICS

225571 NITRIC
(NITRIC OR NITRICS)
L16 49 L15 AND NITRIC

=> l16 and sulfuric
L16 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l16 and sulfuric
176270 SULFURIC
16194 SULPHURIC
190261 SULFURIC
(SULFURIC OR SULPHURIC)
L17 32 L16 AND SULFURIC

=> s l17 and py<=2005
26321242 PY<=2005
L18 24 L17 AND PY<=2005

=> d l18 abs ibib hitstr 1-
YOU HAVE REQUESTED DATA FROM 24 ANSWERS - CONTINUE? Y/(N):y

L18 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB A method for producing dinitrotoluene comprises: (A) the nitration of toluene with nitric acid in the presence of sulfuric acid to give nitrotoluene; (B) separating the reaction product of step (A) into a nitrotoluene-containing organic phase and a sulfuric acid-containing aqueous phase; (C) nitrating the nitrotoluene-containing organic phase with nitric acid in the presence of sulfuric acid to give dinitrotoluene; and (D) separating the reaction product of step (C) into a dinitrotoluene-containing organic phase and a sulfuric-acid containing aqueous phase. The reaction product of step (A) contains 3.0-8% of toluene, in relation to the organic phase, and 0.1-1.2% of nitric acid, in relation to the aqueous phase and the phase separation of step (B) is carried out

in such a manner that further reaction of toluene with nitric acid is prevented. Process flow diagrams are presented.

ACCESSION NUMBER: 2005:811729 CAPLUS

DOCUMENT NUMBER: 143:213353

TITLE: Two-stage nitration method for producing dinitrotoluene from toluene

INVENTOR(S): Buettner, Johannes; MacKenroth, Wolfgang; Hermann, Heinrich; Konieczny, Peter; Gebauer, Juergen

PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany

SOURCE: PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|-------------|
| WO 2005075407 | A1 | 20050818 | WO 2005-EP1017 | 20050202 <- |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
 MR, NE, SN, TD, TG
 DE 102004005913 A1 20050825 DE 2004-102004005913 20040205 <--
 EP 1713756 A1 20061025 EP 2005-701305 20050202
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS
 CN 1918109 A 20070221 CN 2005-80004228 20050202
 BR 2005007293 A 20070703 BR 2005-7293 20050202
 JP 2007520512 T 20070726 JP 2006-551789 20050202
 US 20080242900 A1 20081002 US 2006-586683 20060720
 ZA 2006007374 A 20080625 ZA 2006-7374 20060904
 KR 2006130203 A 20061218 KR 2006-718074 20060905
 IN 2006CN03216 A 20070706 IN 2006-CN3216 20060905
 PRIORITY APPLN. INFO.: DE 2004-102004005913A 20040205
 WO 2005-EP1017 W 20050202

OTHER SOURCE(S): CASREACT 143:213353

IT 25321-14-6P, Dinitrotoluene

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
 (Physical, engineering or chemical process); PREP (Preparation);
 PROC (Process)
 (two-stage nitration method for producing dinitrotoluene from toluene)

RN 25321-14-6 CAPLUS

CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

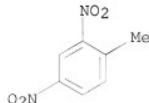
2 [D1-NO₂]

IT 121-14-2P, 2,4-Dinitrotoluene 606-20-2P,
 2,6-Dinitrotoluene

RL: SPN (Synthetic preparation); PREP (Preparation)
 (two-stage nitration method for producing dinitrotoluene from toluene)

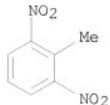
RN 121-14-2 CAPLUS

CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)



RN 606-20-2 CAPLUS

CN Benzene, 2-methyl-1,3-dinitro- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
 (1 CITINGS)
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
 AB The present invention relates to a process for working up or treating aqueous wastewater which are formed during the nitration of toluene to dinitrotoluene with nitrating acid. These aqueous wastewater containing acidic wash water and alkaline wash water from the dinitrotoluene washing step, and distillate from the sulfuric acid concentration step. The process comprises: (1) combining the acidic and alkaline wastewater from the washing step and the aqueous distillate from the sulfuric acid concentration step such that the resulting mixture has a pH below 5; (2) separating the aqueous and organic phases which are formed by phase separation; (3) subjecting the aqueous phase from (2) to an extraction step; (4) extracting the organic components contained in the aqueous phase from (3) with toluene; and (5) introducing the toluene phase enriched with the organic components into the toluene nitration.
 ACCESSION NUMBER: 2005:786 CAPLUS
 DOCUMENT NUMBER: 142:99610
 TITLE: Process for working up the waste water obtained in the preparation of dinitrotoluene
 INVENTOR(S): Munnig, Jurgens; Wastian, Dietmar; Lorenz, Wolfgang; Keggenhoff, Berthold
 PATENT ASSIGNEE(S): Bayer Materialscience AG, Germany
 SOURCE: U.S. Pat. Appl. Publ., 6 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|--------------|
| US 20040262238 | A1 | 20041230 | US 2004-878211 | 20040628 <-- |
| US 6936741 | B2 | 20050830 | | |
| DE 10329304 | A1 | 20050203 | DE 2003-10329304 | 20030630 <-- |
| EP 1496043 | A1 | 20050112 | EP 2004-14227 | 20040617 <-- |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| KR 2005002620 | A | 20050107 | KR 2004-49538 | 20040629 <-- |
| CN 1576236 | A | 20050209 | CN 2004-10063301 | 20040629 <-- |
| CN 1285514 | C | 20061122 | | |
| JP 2005021890 | A | 20050127 | JP 2004-194525 | 20040630 <-- |
| PRIORITY APPLN. INFO.: IT 25321-14-6P, Dinitrotoluene | | | DE 2003-10329304 | A 20030630 |
| RL: IMF (Industrial manufacture); PREP (Preparation)
(process for working up wastewater obtained in preparation of dinitrotoluene) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1—Me

2 [D1—NO₂]

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB Aromatic amines are produced from aromatic hydrocarbons by (a) reacting the aromatic hydrocarbon(s) with a mixture of nitric acid and sulfuric acid to generate a two-phase reaction mixture, (b) separating the reaction mixture into an aqueous acid phase and an organic phase containing the nitroarom. compds., (c) washing the organic phase to purify the nitroarom. compound(s), (d) hydrogenating the nitroarom. compound(s) in the presence of a catalyst to produce the aromatic amine(s) and water of reaction, and (e) separating the water of reaction formed in step (d) from the aromatic amine(s), in which the water of reaction separated in step (e) is used to wash the organic phase containing the nitroarom. compds. in step (c). The object of the present invention is, therefore, to decrease the amount of waste water produced during the preparation of aromatic amines and to increase the economic viability of the aromatic amine preparation process. Surprisingly, it has been found that water with a considerable concentration of aromatic amine(s) of up to 1000 ppm or more, can be used without any problem to wash the corresponding crude nitroarom. compound(s) without impairing either the nitration process or the subsequent hydrogenation reaction to produce the aromatic amine(s).

ACCESSION NUMBER: 2004:1054276 CAPLUS
DOCUMENT NUMBER: 142:40423
TITLE: Process for preparing aromatic amines
INVENTOR(S): Keggenhoff, Berthold; Sittkus, Karl Rudolf; Mueller, Claudia; Zervoudis, Demetrios N.
PATENT ASSIGNEE(S): Bayer Materialscience A.-G., Germany; Bayer Materialscience LLC
SOURCE: Eur. Pat. Appl., 7 pp.
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------|
| EP 1484312 | A1 | 20041208 | EP 2004-12192 | 20040524 <-- |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |

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|---|----|----------|-----------------|--------------|
| US 20040249213 | A1 | 20041209 | US 2003-454332 | 20030604 <-- |
| US 7122701 | B2 | 20061017 | | |
| JP 2004359685 | A | 20041224 | JP 2004-164787 | 20040602 <-- |
| CN 1572784 | A | 20050202 | CN 2004-1004867 | 20040602 <-- |
| KR 2004104926 | A | 20041213 | KR 2004-40281 | 20040603 <-- |
| PRIORITY APPLN. INFO.: | | | US 2003-454332 | A 20030604 |
| IT 25321-14-6P, Dinitrotoluene | | | | |
| RL: IMF (Industrial manufacture); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent) | | | | |
| (process for preparing aromatic amines with reduced waste water release) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1-Me

2 [D1-NO₂]

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN

AB A procedure is described for the preparation of dinitrotoluene by a two-stage nitration of toluene in which: (A) in a first stage toluene is adiabatically nitrated with nitric acid and the toluene is nitrated to ≥90% and where ≤50% of the assigned toluene is converted into dinitrotoluene, subsequently the mono nitrotoluene-containing organic phase and the aqueous sulfuric acid-containing acid phase are separated, the aqueous sulfuric acid-containing acid phase is subjected to flash evaporation, concentrated, and the concentrated sulfuric acid recovered is lead back into the reaction of the first stage and/or the reaction of the second stage; and isothermally completely converts (b) in a second stage the mononitrotoluene-containing organic phase from the first stage with nitrating acid and the aqueous sulfuric acid-containing acid phase is separated by vacuum evaporation, concentrated, and the recovered concentrated sulfuric acid is recycled to the first stage and/or the second stage. Process flow diagrams are presented.

ACCESSION NUMBER: 2004:738349 CAPLUS

DOCUMENT NUMBER: 141:245230

TITLE: Two-stage nitration process for the production of dinitrotoluene from toluene

INVENTOR(S): Dieterich, Erwin; Hielscher, Anke; Keggenhoff, Berthold; Keller-Killewald, Manfred; Muennig, Juergen; Wastian, Dietmar

PATENT ASSIGNEE(S): Bayer Ag, Germany

SOURCE: Ger. Offen., 13 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|--------------|
| DE 10307140 | A1 | 20040909 | DE 2003-10307140 | 20030220 <-- |
| EP 1508563 | A1 | 20050223 | EP 2004-2754 | 20040207 <-- |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| US 20040267061 | A1 | 20041230 | US 2004-780266 | 20040217 <-- |
| US 6984762 | B2 | 20060110 | | |
| KR 2004075751 | A | 20040830 | KR 2004-10981 | 20040219 <-- |
| JP 2004250452 | A | 20040909 | JP 2004-43476 | 20040219 <-- |
| RU 2330836 | C2 | 20080810 | RU 2004-104740 | 20040219 |
| CN 1523006 | A | 20040825 | CN 2004-10006845 | 20040220 <-- |
| CN 100343224 | C | 20071017 | | |
| PRIORITY APPLN. INFO.: | | | DE 2003-10307140 | A 20030220 |
| OTHER SOURCE(S): CASREACT 141:245230 | | | | |
| IT 25321-14-6P, Dinitrotoluene | | | | |
| RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(two-stage nitration process for the production of dinitrotoluene from
toluene) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L18 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
 AB An improvement in a process for the production of dinitrotoluene and particularly to the recovery of dinitrotoluene and organic byproducts from the wastewater and wash waters generated in the process is reported. Wastewater and wash water streams contaminated with residual levels of mononitrotoluene, dinitrotoluene, and organic byproducts, formed in the purification process, are contacted with toluene. An organic phase and an aqueous

phase are generated. The phases are separated and the dinitrotoluene recovered from the organic phase; process flow diagrams are presented.

ACCESSION NUMBER: 2003:35387 CAPLUS

DOCUMENT NUMBER: 138:91814

TITLE: Toluene extraction of dinitrotoluene wash water

INVENTOR(S): Sawicki, John Edward

PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA

SOURCE: U.S., 10 pp.

CODEN: USXAM

DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----------------------------|--|----------|-----------------|--------------|
| US 6506948 | B1 | 20030114 | US 2002-72217 | 20020207 <-- |
| PRIORITY APPLN. INFO.: | | | | |
| IT 25321-14-6P | Dinitrotoluene
RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(toluene extraction of dinitrotoluene wash water) | | | |
| RN 25321-14-6 | CAPLUS | | | |
| CN Benzene, methyldinitro- | (CA INDEX NAME) | | | |



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB A continuous, isothermal process for the preparation of mononitrotoluenes in the presence of phosphoric acid using sulfuric and aqueous nitric acid is described.
ACCESSION NUMBER: 2002:773663 CAPLUS
DOCUMENT NUMBER: 137:281030
TITLE: Continuous isothermal process for the preparation of mononitrotoluene in the presence of phosphoric acid
INVENTOR(S): Gotta, Matthias; Demuth, Ralf; Zirngiebl, Eberhard; Weber, Hans-Martin; Ronge, Georg
PATENT ASSIGNEE(S): Bayer Aktiengesellschaft, Germany; Bayer Chemicals AG
SOURCE: Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|--------------|
| EP 1247798 | A1 | 20021009 | EP 2002-6614 | 20020325 <-- |
| EP 1247798 | B1 | 20040602 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| DE 10117207 | C1 | 20021114 | DE 2001-10117207 | 20010406 <-- |
| IN 2002MU00269 | A | 20051118 | IN 2002-MU269 | 20020321 <-- |

| | | | | |
|---|----|----------|------------------|--------------|
| AT 268321 | T | 20040615 | AT 2002-6614 | 20020325 <-- |
| US 20020147372 | A1 | 20021010 | US 2002-114288 | 20020402 <-- |
| US 6768032 | B2 | 20040727 | | |
| CA 2380159 | A1 | 20021006 | CA 2002-2380159 | 20020403 <-- |
| JP 2002338529 | A | 20021127 | JP 2002-101189 | 20020403 <-- |
| JP 4257893 | B2 | 20090422 | | |
| KR 869014 | B1 | 20081117 | KR 2002-18489 | 20020404 |
| CN 1380283 | A | 20021120 | CN 2002-105465 | 20020405 <-- |
| CN 1219745 | C | 20050921 | | |
| RU 2293722 | C2 | 20070220 | RU 2002-108673 | 20020405 |
| HK 1051180 | A1 | 20060512 | HK 2003-103447 | 20030515 |
| PRIORITY APPLN. INFO.: | | | DE 2001-10117207 | A 20010406 |
| IT 25321-14-6P, Dinitrotoluene | | | | |
| RL: BYP (Byproduct); PREP (Preparation) | | | | |
| (in a continuous isothermal process for the preparation of mononitrotoluene | | | | |
| in the presence of phosphoric acid) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1-Me

2 [D1- NO₂]

| | | |
|----------------------|---|---|
| OS.CITING REF COUNT: | 1 | THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS) |
| REFERENCE COUNT: | 4 | THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT |

L18 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
 AB A stripping and neutralization process for minimization of wastewater in the nitration manufacture of dinitrotoluene from toluene is described and process flow diagrams are presented.

ACCESSION NUMBER: 2002:632480 CAPLUS

DOCUMENT NUMBER: 137171386

TITLE: Stripping and neutralization process for minimization of wastewater in the nitration manufacture of dinitrotoluene from toluene

INVENTOR(S): Plinke, Guenter; Winterbauer, Hansjuergen

PATENT ASSIGNEE(S): Plinke G.m.b.H., Germany

SOURCE: Ger., 8 pp.

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------------------|------|----------|------------------|--------------|
| ----- | ---- | ----- | ----- | ----- |
| DE 10143800 | C1 | 20020822 | DE 2001-10143800 | 20010906 <-- |
| PRIORITY APPLN. INFO.: | | | DE 2001-10143800 | 20010906 |
| IT 25321-14-6P, Dinitrotoluene | | | | |

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PYP (Physical process);
PREP (Preparation); PROC (Process)
(stripping and neutralization process for minimization of wastewater in
the nitration manufacture of dinitrotoluene from toluene)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB An integrated process for treating alkaline wash water effluent from
nitroaromatic (e.g., nitrobenzene) manufacture, principally containing
nitro-hydroxy-aromatic compds. is described. The integrated process concs.
the alkaline wash water to recover chems. and water prior to treating the
concentrate through supercrit. water oxidation. The supercrit. water oxidation
step

consists of treating the concentrate in the presence of an oxygen source at
conditions, which are supercrit. for water to cause a substantial portion
of the organic component of the concentrate to oxidize. The product effluent
includes a gaseous component and a clean water component, and in the event
that insol. ash is formed, an ash component. The new integrated process
results in reduced chemical and water consumption compared to existing
processes. In addition, the treated wash water effluent can be recycled to
process or directly discharged.

ACCESSION NUMBER: 2001:668367 CAPLUS
DOCUMENT NUMBER: 135:228504
TITLE: Integrated effluent treatment process for
nitroaromatic manufacture
INVENTOR(S): Boyd, David Anthony; Gairns, Stuart Alan; Guenkel,
Alfred Alexander
PATENT ASSIGNEE(S): Noram Engineering and Constructors Ltd., Can.
SOURCE: U.S., 15 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|--------------|
| US 6288289 | B1 | 20010911 | US 2000-492851 | 20000127 <-- |
| EP 1132347 | A2 | 20010912 | EP 2001-101845 | 20010126 <-- |
| EP 1132347 | A3 | 20010926 | | |

EP 1132347 B1 20050928
EP 1132347 B2 20090318
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO
PRIORITY APPLN. INFO.: US 2000-492851 A 20000127
IT 25321-14-6P, Dinitrotoluene
RL: IMF (Industrial manufacture); PUR (Purification or recovery);
PREP (Preparation)
(in an integrated effluent treatment process for nitroarom. manufacture)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD
(8 CITINGS)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB In view of problems of low heat efficiency and environmental pollution
problems during spent acid concentration, the spent waste acid from
mononitrotoluene (MNT) was to be concentrated to 72%-77% at 140-160° and
200-300 mm Hg. The concentrated sulfuric acid could be used directly
in the nitrating plant. It features simplicity in operation, satisfied
results in practice observed
ACCESSION NUMBER: 2000:774606 CAPLUS
DOCUMENT NUMBER: 134:268036
TITLE: Study on the cycling utilization of disposed spent
acid of mono-nitrotoluene
AUTHOR(S): Dong, Yun; Cui, Yingxiang; Bao, Yiguo; Yang, Hui
CORPORATE SOURCE: Jiangsu Huaihua Group Co., Ltd., Xuyi, 211742, Peop.
Rep. China
SOURCE: Ranliao Gongye (2000), 37(3), 33-35
CODEN: RAGOFS; ISSN: 1006-6632
PUBLISHER: Huagongbu Shenyang Huagong Yanjiuyuan
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
IT 25321-14-6P, Dinitrotoluene
RL: BYP (Byproduct); PREP (Preparation)
(in cycling waste acid of mono-nitrotoluene manufacture)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

L18 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB The nitration of aromatic compds. is achieved in high yield and selectivity by using oxygen activated by an inorg. catalyst and nitrogen dioxide. Since this process uses neither concentrated nitric nor sulfuric acids, the generation of spent waste acid does not occur. Furthermore, the process does not encounter the problem of high costs associated with the generation of ozone as in an alternative nitration process. Since the solubility of oxygen in a reaction medium is increased by using pressurized oxygen, nitrogen dioxide is activated by a porous inorg. oxide catalyst (e.g., silica) and thus an aromatic compound (e.g., benzene) is nitrated into a nitro compound (e.g., PhNO₂), the reaction rate is significantly increased, and the recovery of reactants is easy due to the insolv. of the catalyst.

ACCESSION NUMBER: 1999:549245 CAPLUS
DOCUMENT NUMBER: 131:157644
TITLE: Process and catalysts for the nitration of aromatic compounds using oxygen and nitrogen dioxide
INVENTOR(S): Lee, Bon-Su; Chung, Kyoo-Hyun; Lee, Yoon-Sik; Kim, Young-Gyu
PATENT ASSIGNEE(S): Inha University Foundation, S. Korea
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------|
| WO 9942433 | A1 | 19990826 | WO 1998-KR285 | 19980918 <-- |
| W: JP, US | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, | | | | |
| PT, SE | | | | |
| EP 1062198 | A1 | 20001227 | EP 1998-944327 | 19980918 <-- |
| EP 1062198 | B1 | 20030604 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, | | | | |
| IE, FI | | | | |
| JP 2002503716 | T | 20020205 | JP 2000-532386 | 19980918 <-- |
| AT 242196 | T | 20030615 | AT 1998-944327 | 19980918 <-- |
| US 6291726 | B1 | 20010918 | US 2000-622285 | 20001018 <-- |
| PRIORITY APPLN. INFO.: | | | KR 1998-5014 | A 19980218 |
| | | | WO 1998-KR285 | W 19980918 |

OTHER SOURCE(S): CASREACT 131:157644
IT 25321-14-6P, Dinitrotoluene
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(catalysts for the conversion of aromatic compds. using a oxygen and nitrogen dioxide into nitroaroms.)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(4 CITINGS)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB The pollution source in nitrotoluene production was introduced, approaches for reducing the pollution were discussed. The waste gas emitted from the nitration process mainly contained NO and NO₂, the waste acid from the nitration process mainly contained H₂SO₄ 68-71, HNO₃ 1-2, and nitration product 0.4-0.6%. The wastewater from the after-treatment of nitrotoluene contained nitrotoluene, NaOH, Na₂SO₄, and phenol. Tar from rectification process contained 19-23% dinitrotoluene and 77-81% nitrotoluene. Measures for reuse of the waste acid and recovery of nitrotoluene from the tar were introduced. The waste gas was absorbed with Na₂CO₃, and formed byproduct nitrate. The toxic wastewater was extracted and recovered (or incinerated), the phenol containing wastewater was treated by biol. treatment method.
ACCESSION NUMBER: 1999:464437 CAPLUS
DOCUMENT NUMBER: 131:189010
TITLE: Pollution control technology in nitrotoluene production
AUTHOR(S): Dong, Yun
CORPORATE SOURCE: Jiangsu Huaihe Chemical Plant, Yuyi, 211742, Peop. Rep. China
SOURCE: Huagong Huanbao (1999), 19(3), 172-175
CODEN: HUHUFD; ISSN: 1006-1878
PUBLISHER: Huagong Huanbao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
IT 25321-14-6P, DiNitrotoluene
RL: POL (Pollutant); PUR (Purification or recovery); REM (Removal or disposal); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(removal from tar; pollution control technol. in nitrotoluene manufacturing)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

L18 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB A process is presented for the production of dinitrotoluene, a TDI intermediate (no data), using a feed sulfuric acid, referred to as weak acid, as the feed sulfuric acid for the nitration facility. The weak acid feed concentration is 86-91%, preferably 87-89%, to meet

the total sulfuric acid requirements for the facility. This is accomplished by utilizing concurrent processing in a mononitration zone and countercurrent nitration with respect to sulfuric acid in the dinitration zone. Process flow diagrams are presented.

ACCESSION NUMBER: 1999:209138 CAPLUS
DOCUMENT NUMBER: 130:239145
TITLE: Continuous nitration process for producing dinitrotoluene from toluene with nitric and sulfuric acids
INVENTOR(S): Mazzafro, William Joseph; Clarke, Stephen Ian; Simpson, Mark Shedric; Van Court, Carr Richard
PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA
SOURCE: Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------------------------|---|----------|-----------------|--------------|
| EP 903336 | A2 | 19990324 | EP 1998-117490 | 19980915 <-- |
| EP 903336 | A3 | 20010425 | | |
| EP 903336 | B1 | 20030521 | | |
| R: AT, BE, CH,
IE, SI, LT, | DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
LV, FI, RO | | | |
| US 5902910 | A | 19990511 | US 1997-933706 | 19970919 <-- |
| BR 9803446 | A | 19991214 | BR 1998-3446 | 19980914 <-- |
| PT 903336 | T | 20030930 | PT 1998-117490 | 19980915 <-- |
| ES 2196446 | T3 | 20031216 | ES 1998-117490 | 19980915 <-- |
| CN 1216760 | A | 19990519 | CN 1998-119555 | 19980919 <-- |
| CN 11573362 | C | 20040714 | | |

PRIORITY APPLN. INFO.: US 1997-933706 A 19970919
IT 25321-14-6P, Dinitrotoluene
RL: IMF (Industrial manufacture); PREP (Preparation)
(continuous nitration process for producing dinitrotoluene from toluene with nitric and sulfuric acids)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)

L18 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB Crude dinitrotoluene from nitration of toluene or mononitrotoluene, after separation of nitrating acid, is extracted with a countercurrent stream of dilute aqueous solution of HNO₃, H₂SO₄ and HNO₂ in a multistage process where the volume ratio of dinitrotoluene to aqueous solution is 1:3 to 10:1, and the aqueous extract is recycled to the nitrating process, directly or after concentration (e.g., to 65% HNO₃). Approx. 98% of the HNO₃ and HNO₂ in the crude dinitrotoluene are removed.

ACCESSION NUMBER: 1996:676109 CAPLUS
DOCUMENT NUMBER: 125:304516
ORIGINAL REFERENCE NO.: 125:56913a,56916a
TITLE: Nitric acid, sulfuric acid and nitrous acid removal, recovery and recycling in nitrating of toluene or mononitrotoluene
INVENTOR(S): Hermann, Heinrich; Gebauer, Juergen
PATENT ASSIGNEE(S): Josef Meissner GmbH & Co., Germany
SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|--------------|
| EP 736514 | A1 | 19961009 | EP 1996-104233 | 19960316 <-- |
| EP 736514 | B1 | 20010620 | | |
| R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, PT, SE | | | | |
| DE 19512114 | A1 | 19961010 | DE 1995-19512114 | 19950404 <-- |
| DE 19512114 | C2 | 20000427 | | |
| US 5756867 | A | 19980526 | US 1995-529100 | 19950915 <-- |
| AT 202333 | T | 20010715 | AT 1996-104233 | 19960316 <-- |
| IN 187139 | A1 | 20020209 | IN 1996-CA475 | 19960318 <-- |
| CA 2173381 | A1 | 19961005 | CA 1996-2173381 | 19960403 <-- |
| CA 2173381 | C | 20070626 | | |
| CN 11459893 | A | 19970326 | CN 1996-105960 | 19960403 <-- |
| CN 1085656 | C | 20020529 | | |
| PL 187688 | B1 | 20040930 | PL 1996-313631 | 19960404 <-- |
| PRIORITY APPLN. INFO.: | | | DE 1995-19512114 | A 19950404 |
| IT 25321-14-6P, Dinitrotoluene | | | | |
| RL: IMF (Industrial manufacture); PUR (Purification or recovery); | | | | |

PREP (Preparation)

(nitric acid, sulfuric acid and nitrous acid
removal, recovery and recycling in nitrating of toluene or
mononitrotoluene)

RN 25321-14-6 CAPLUS

CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD
(8 CITINGS)

L18 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
 AB Aromatic compds. (e.g., PhMe) are continuously dinitrated with a nitronium ion-containing solution (e.g., aqueous mixts. of HNO₃ and H₂SO₄) by: (a) conducting the dinitration in an emulsion reaction mixture; (b) using 1.3-3.5 mol HNO₃ (in the form of a nitronium ion-containing solution) per mol aromatic compound; (c) maintaining the dispersion from coalescence through the use of multiple dispersions; (d) the first dispersion of the liquid stream is ≥1 s for manufacture of the emulsion; and (e) ≥20% of the total HNO₃ is added to the first dispersion. A process flow diagram and reactor schematic is presented.

ACCESSION NUMBER: 1996:345384 CAPLUS
 DOCUMENT NUMBER: 125:10357
 ORIGINAL REFERENCE NO.: 125:2281a,2284a
 TITLE: Continuous method for the dinitration of aromatic compounds
 INVENTOR(S): Pirkl, Hans-Georg; Schomaecker, Reinhard; Klingler, Uwe; Schieb, Thomas; Wiechers, Gerhard; Zimmermann, Juergen
 PATENT ASSIGNEE(S): Bayer A.-G., Germany
 SOURCE: Ger. Offen., 13 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------------------------|------|----------|-----------------|--------------|
| DE 4437047 | A1 | 19960418 | DE 1994-4437047 | 19941017 <-- |
| EP 708076 | A2 | 19960424 | EP 1995-115901 | 19951009 <-- |
| EP 708076 | A3 | 20010919 | | |
| EP 708076 | B1 | 20030423 | | |
| R: BE, DE, ES, FR, GB, IT, NL | | | | |
| ES 2196036 | T3 | 20031216 | ES 1995-115901 | 19951009 <-- |
| CA 2160520 | A1 | 19960418 | CA 1995-2160520 | 19951013 <-- |

| | | | | |
|-------------|---|----------|----------------|--------------|
| US 5616818 | A | 19970401 | US 1995-543095 | 19951013 <-- |
| JP 08208566 | A | 19960813 | JP 1995-291687 | 19951016 <-- |
| BR 9504424 | A | 19970520 | BR 1995-4424 | 19951016 <-- |
| CN 1125723 | A | 19960703 | CN 1995-109589 | 19951017 <-- |
| CN 1059667 | C | 20001220 | | |

PRIORITY APPLN. INFO.: DE 1994-4437047 A 19941017

OTHER SOURCE(S): CASREACT 125:10357

IT 25321-14-6P, Dinitrotoluene

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(continuous method for the dinitration of aromatic compds.)

RN 25321-14-6 CAPLUS

CN Benzene, methylidinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)

L18 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN

AB A review with 62 refs. Tech. and chemical aspects of the industrial nitration of toluene to mono- (MNT) and dinitrotoluene (DNT) in mixed acid are discussed. In modern mixed acid nitration plants for DNT, the spent acid from the MNT-stage is purified, reconcd., and recycled back into the nitration process. Thus the consumption of sulfuric acid per one ton of DNT is reduced to almost zero. Moreover, also the sulfuric-, nitric-, nitrous acid and MNT/DNT from the washing of the crude DNT and from the purification and reconcn. of the MNT spent acid are recovered and recycled back into nitration. By doing so not only the nitrate load of the waste water from a DNT nitration plant is reduced by 95% but also the consumption figures for nitric acid are considerably improved. More than 98% of the nitric acid needed for nitration can thus be converted to DNT.

ACCESSION NUMBER: 1996:288541 CAPLUS

DOCUMENT NUMBER: 124:320045

ORIGINAL REFERENCE NO.: 124:59293a,59296a

TITLE: Industrial nitration of toluene to dinitrotoluene.
Requirements of a modern facility for the production of dinitrotoluene

AUTHOR(S): Hermann, H.; Gebauer, J.; Konieczny, P.

CORPORATE SOURCE: Josef Meissner GmbH Co., Cologne, 50968, Germany

SOURCE: ACS Symposium Series (1996), 623(Nitration), 234-249

CODEN: ACSMC8; ISSN: 0097-6156

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

IT 25321-14-6P, Dinitrotoluene

RL: IMF (Industrial manufacture); PREP (Preparation)

(requirements of modern facility for industrial nitration of toluene to dinitrotoluene)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L18 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB A new process, developed at Olin for manufacture of dinitrotoluene, avoids use of sulfuric acid by using high strength nitric acid to synthesize DNT, a precursor of toluene diisocyanate. The advantages of the new process include reduced raw material consumption and significantly lower capital investment for waste treatment facilities. These advantages are derived from careful control of the reaction conditions. Unwanted byproducts are minimized in the reactor and do not have to be removed in subsequent processing.

ACCESSION NUMBER: 1996:288539 CAPLUS
DOCUMENT NUMBER: 124:320067
ORIGINAL REFERENCE NO.: 124:59297a,59300a
TITLE: Commercial dinitrotoluene production process
AUTHOR(S): Quakenbush, Allen B.; Pennington, B. Timothy
CORPORATE SOURCE: Olin corp., Lake Charles, LA, 70602, USA
SOURCE: ACS Symposium Series (1996), 623(Nitration), 214-222
CODEN: ACSMC8; ISSN: 0097-6156
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 25321-14-6P, Dinitrotoluene
RL: IMF (Industrial manufacture); PREP (Preparation)
(dinitrotoluene manufacture by nitration of toluene in presence of nitric acid only)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)

L18 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB Dinitrotoluene isomer mixts., useful as TDI precursors (no data), which have reduced ortho-isomer content (e.g., 4.0-4.1%), are prepared via the 2-step nitration of PhMe with HNO₃ and H₂SO₄ in which the second nitration step is conducted under adiabatic conditions.

ACCESSION NUMBER: 1996:254271 CAPLUS
DOCUMENT NUMBER: 124:288975
ORIGINAL REFERENCE NO.: 124:53579a,53582a
TITLE: Two-step nitration process for the preparation of dinitrotoluene isomer mixtures having reduced ortho-isomer content
INVENTOR(S): Klingler, Uwe; Schieb, Thomas; Wiechers, Gerhard; Zimmermann, Juergen
PATENT ASSIGNEE(S): Bayer A.-G., Germany
SOURCE: Eur. Pat. Appl., 4 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------------------------|------|----------|-----------------|--------------|
| EP 696571 | A2 | 19960214 | EP 1995-111996 | 19950731 <-- |
| EP 696571 | A3 | 19980610 | | |
| EP 696571 | B1 | 20000126 | | |
| R: BE, DE, ES, FR, GB, IT, NL | | | | |
| DE 4428462 | A1 | 19960215 | DE 1994-4428462 | 19940811 <-- |
| ES 2144074 | T3 | 20000601 | ES 1995-111996 | 19950731 <-- |
| US 5689018 | A | 19971118 | US 1995-510803 | 19950803 <-- |
| CA 2155562 | A1 | 19960212 | CA 1995-2155562 | 19950807 <-- |
| CA 2155562 | C | 20061114 | | |
| JP 08059565 | A | 19960305 | JP 1995-222793 | 19950809 <-- |
| JP 3631814 | B2 | 20050323 | | |
| BR 9503612 | A | 19960430 | BR 1995-3612 | 19950810 <-- |
| CN 1121507 | A | 19960501 | CN 1995-109295 | 19950811 <-- |
| CN 1075054 | C | 20011121 | | |

PRIORITY APPLN. INFO.: DE 1994-4428462 A 19940811
OTHER SOURCE(S): CASREACT 124:288975
IT 25321-14-6P, Dinitrotoluene
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(two-step nitration process for the preparation of dinitrotoluene isomer mixts. having reduced ortho-isomer content)

RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L18 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB Replacement of H₂SO₄ in mixed acid aromatic nitration by inorg. solids, with accumulation or elimination of produced water results in a fundamentally different behavior of the HNO₃-solid couple. If water accumulates, HNO₃ becomes a selective oxidative coupling catalyst, whereas when water is eliminated efficiently, HNO₃ alone behaves as a strong nitrating agent, with increased para-selectivity as compared to the sulfo-nitric system.

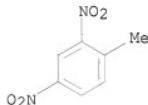
ACCESSION NUMBER: 1992:23321 CAPLUS
DOCUMENT NUMBER: 116:23321
ORIGINAL REFERENCE NO.: 116:4059a,4062a
TITLE: Nitric acid associated with inorganic
solids: a versatile reagent and catalyst in the
chemistry of aromatics
AUTHOR(S): Gubelmann, M. H.; Doussain, C.; Tirel, P. J.; Popa, J.
M.
CORPORATE SOURCE: Rhone Poulen Rech., Saint Fons, F-69192, Fr.
SOURCE: Studies in Surface Science and Catalysis (1991
, 59(Heterog. Catal. Fine Chem. 2), 471-8
CODEN: SSCTDM; ISSN: 0167-2991
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 25321-14-6P, Dinitrotoluene
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, during toluene nitration)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

IT 121-14-2P, 2,4-Dinitrotoluene
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of, by nitrotoluene nitration, selective catalysts for)
RN 121-14-2 CAPLUS
CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)



L18 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB (O2N)2C6H3Me (I), useful as intermediate for tolylene diisocyanate, is
prepared by liquid-phase nitration of MePh in the absence of H₂SO₄ and phase
separation by an alkali or alkaline earth nitrate salt. MePh was added to 9
mol
equiv 98% HNO₃ at 70° to complete the nitration in 4 min,
Mg(NO₃)₂.6H₂O was added to sep. the lighter phase containing I from the heavy
phase containing HNO₃/Mg(NO₃)₂. This process avoids using H₂SO₄ during
nitration which results in process simplification and economy.

ACCESSION NUMBER: 1991:408280 CAPLUS
DOCUMENT NUMBER: 115:8280
ORIGINAL REFERENCE NO.: 115:1609a,1612a
TITLE: Process for the production of dinitrotoluene
INVENTOR(S): Mason, Robert W.
PATENT ASSIGNEE(S): Olin Corp., USA
SOURCE: U.S., 3 pp. Cont-in-part of U.S. Ser. No. 210,549.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| US 5001272 | A | 19910319 | US 1989-402322 | 19890905 <-- |
| CA 1340073 | C | 19981006 | CA 1989-603642 | 19890622 <-- |
| CA 2008342 | A1 | 19910723 | CA 1990-2008342 | 19900123 <-- |
| IN 177244 | A1 | 19961214 | IN 1990-DE77 | 19900130 <-- |
| CN 1054247 | A | 19910904 | CN 1990-100885 | 19900222 <-- |
| CN 1026583 | C | 19941116 | | |
| PRIORITY APPLN. INFO.: | | | US 1988-210549 | A2 19880622 |

IT 25321-14-6P, Dinitrotoluene
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate or toluene diisocyanate)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB A continuous method of mixing acid for cascade of nitrators is proposed.
At the beginning, some of the nitrators in the cascade are empty, and the
others are filled with acid of concentration Ci (initial acid concentration in
the ith
nitrator). Acid of concentration CB is fed continuously into the 1st
nitrator. While the last one is full, concentration in every nitrator would be
as desired. During this process, the acid with different concentration mixes
inside the 1st one and flows into the 2nd, etc. A math. model of this
process is studied, so has the searching technique for optimum operation
parameters CB, Co and dimensionless time. The method is accurate,
fast, and easily carried out. It can be used for any kind of cascade of
reactors.

ACCESSION NUMBER: 1990:634205 CAPLUS
DOCUMENT NUMBER: 113:234205
ORIGINAL REFERENCE NO.: 113:39483a,39486a
TITLE: Continuous method of mixing acid and its mathematical
model for TNT manufacture
AUTHOR(S): Hu, Shaoming
CORPORATE SOURCE: Xian Mod. Chem. Res. Inst., Xian, 710061, Peop. Rep.
China
SOURCE: Proceedings of the International Pyrotechnics Seminar
(1990), 15th, 421-6
CODEN: PPYSD7; ISSN: 0270-1898
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 25321-14-6P, Dinitrotoluene
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or
reagent)
(nitration of, mixed acid in, preparation of)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

L18 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN

AB The process for the recovery of HNO₃ in the spent acid phase from a mixed acid mononitration reaction comprises, (a) adding sufficient amount of HNO₃ to provide at least .apprx.2 weight% HNO₃ concentration in the spent acid phase from

the mononitration reaction, and (b) adiabatically reacting a mononitroarom. hydrocarbon in greater than a stoichiometric amount with the HNO₃ in the spent acid phase to afford a dinitroarom. hydrocarbon product and a HNO₃ concentration of less than <0.25 weight% in the spent acid phase.

The above recovery process was used in the preparation of dinitrotoluenes from toluene and HNO₃ and H₂SO₄.

ACCESSION NUMBER: 1985:166450 CAPLUS

DOCUMENT NUMBER: 102:166450

ORIGINAL REFERENCE NO.: 102:26161a,26164a

TITLE: Nitric acid recovery by the adiabatic nitration of nitro aromatics with fortified spent acid

INVENTOR(S): Carr, Richard V. C.

PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA

SOURCE: U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| US 4496782 | A | 19850129 | US 1983-512289 | 19830708 <-- |
| PRIORITY APPLN. INFO.: | | | US 1983-512289 | 19830708 |

OTHER SOURCE(S): MARPAT 102:166450

IT 25321-14-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, from toluene by nitration with nitric acid-sulfuric acid, nitric acid recovery in relation to)

RN 25321-14-6 CAPLUS

CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD
(3 CITINGS)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB The manufacture of dinitrotoluene by nitration of toluene with HNO₃-H₂SO₄ was improved by (1) contacting the spent nitrating acid mixture with an oxidizing or a reducing agent to remove contaminant HNO₂, and (2) contacting the HNO₂-free spent acid from step 1 with PhMe to remove residual HNO₃ leaving a mixture consisting essentially of H₂SO₄ and organic contaminants.

ACCESSION NUMBER: 1981:208522 CAPLUS
DOCUMENT NUMBER: 94:208522
ORIGINAL REFERENCE NO.: 94:34099a, 34102a
TITLE: Refining aqueous acid mixtures utilized in nitration of aromatics
INVENTOR(S): Milligan, Barton; Huang, Der-Shing
PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | ----- |
| US 4257986 | A | 19810324 | US 1979-8906 | 19790202 <-- |
| PRIORITY APPLN. INFO.: | | | US 1979-8906 | 19790202 |
| IT 25321-14-6P | | | | |
| RL: SPN (Synthetic preparation); PREP (Preparation) | | | | |
| (preparation of, by nitration of toluene with sulfuric acid-nitric acid, refining of spent acid mixture in) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1—Me

2 [D1—NO₂]

OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (13 CITINGS)

L18 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
AB Using CH₂Cl₂ as a solvent in the nitration of aromatic compds. with HNO₃-H₂SO₄ (1) made the reaction conditions uniform, (2) extracted undegraded product efficiently without dilution of the nitrating mixture, (3) reduced the consumption of HNO₃, (4) allowed recycle of H₂SO₄ with min fortification, and (5) improved the yield. E.g., mononitration of C₆H₆ without CH₂Cl₂ required 4 mol excess HNO₃ and gave 98% yield; with CH₂Cl₂ as solvent only 1 mol excess HNO₃ gave >99% yield. About 18 aromatic compds. including xylene, PhCN, Ph₂CO, naphthalene, and acenaphthene were mono- or dinitrated by this method. CH₂Cl₂ was the solvent for preparation of nitronium hydrogen disulfate from HNO₃ and SO₃.

ACCESSION NUMBER: 1978:6463 CAPLUS
DOCUMENT NUMBER: 88:6463
ORIGINAL REFERENCE NO.: 88:1089a,1092a
TITLE: Synthetic housekeeping - nitration
AUTHOR(S): Davis, Gary; Cook, Newell
CORPORATE SOURCE: Res. Dev. Cent., Gen. Electr. Co., Schenectady, NY,
USA
SOURCE: CHEMTECH (1977), 7(10), 626-9
CODEN: CHTEDD; ISSN: 0009-2703
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 25321-14-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD

(2 CITINGS)

L18 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2009 ACS on STN
 AB Aromatic hydrocarbons are treated with HNO₃-H₂SO₄ mixts. in emulsions to give nitrated aromatics and the same acid-free nitrated aromatics are added to the emulsions to sep. the nitrated aromatics. Thus, mononitrotoluene is introduced into an apparatus at 100 parts/hr., a mixture containing 70 weight % H₂SO₄ and 30 weight % HNO₃ introduced at 110 parts/hr., the

mixture agitated to give an emulsion, and 14.3 parts acid-free dinitrotoluene added to sep. the emulsion.

ACCESSION NUMBER: 1968:95504 CAPLUS
 DOCUMENT NUMBER: 68:95504
 ORIGINAL REFERENCE NO.: 68:18395a,18398a
 TITLE: Emulsion separation of aromatic nitro compounds
 INVENTOR(S): Menke, William K.
 PATENT ASSIGNEE(S): Mobay Chemical Co.
 SOURCE: U.S., 2 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|--------------|
| US 3350466 | ---- | 19671031 | US 1966-555282 | 19660606 <-- |
| IT 25321-14-6P | | | | |
| RL: PREP (Preparation)
(manufacture of, separation from emulsion with nitric and sulfuric acids in) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
 (1 CITINGS)

```
=> e johannes buttner/in
E1      1    JOHANNES ARNO/IN
E2      1    JOHANNES BARTH/IN
E3      0 --> JOHANNES BUTTNER/IN
E4      1    JOHANNES CAROL ADOLF MAZGAREANU/IN
E5      3    JOHANNES CHARLES/IN
E6      1    JOHANNES CHARLES W/IN
E7      1    JOHANNES CONRAD/IN
E8      1    JOHANNES DAMHUIS EDUARD HENDRIKUS/IN
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E9 1 JOHANNES DANA B JR/IN
E10 2 JOHANNES DEN BRANDT ADRIANUS H/IN
E11 1 JOHANNES DERICK RAYMOND/IN
E12 10 JOHANNES DIETER/IN

=> e buttner johannes/in
E1 1 BUTTNER HENRY F/IN
E2 1 BUTTNER HILDEGARD/IN
E3 1 --> BUTTNER JOHANNES/IN
E4 2 BUTTNER JUSTIN D/IN
E5 6 BUTTNER KLAUS/IN
E6 1 BUTTNER MARK D/IN
E7 3 BUTTNER MARK JEREMY/IN
E8 2 BUTTNER MARK P/IN
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E10 1 BUTTNER MAX/IN
E11 5 BUTTNER PETER/IN
E12 1 BUTTNER REINER/IN

=> s e3
L19 1 "BUTTNER JOHANNES"/IN

=> e mackenroth wolfgang/in
E1 4 MACKENROTH CHRISTIANE/IN
E2 1 MACKENROTH JOSEPH R/IN
E3 28 --> MACKENROTH WOLFGANG/IN
E4 6 MACKENS UWE/IN
E5 2 MACKENSEN A W/IN
E6 2 MACKENSEN ANDREAS/IN
E7 1 MACKENSEN EDER SUSANNE/IN
E8 1 MACKENSEN HERBERT/IN
E9 6 MACKENSEN KLAUS/IN
E10 1 MACKENSEN OTTO/IN
E11 1 MACKENSEN WARREN J/IN
E12 1 MACKENSIE PHILIP W/IN

=> s e3
L20 28 "MACKENROTH WOLFGANG"/IN

=> e hermann heinrich/in
E1 4 HERMANN HARTI/IN
E2 1 HERMANN HEIDO/IN
E3 13 --> HERMANN HEINRICH/IN
E4 1 HERMANN HEINZ/IN
E5 1 HERMANN HEINZ GUENTER/IN
E6 7 HERMANN HELMUT/IN
E7 4 HERMANN HELMUTH/IN
E8 1 HERMANN HENRY/IN
E9 2 HERMANN HERBERT/IN
E10 1 HERMANN HILDEGARD/IN
E11 2 HERMANN HOLGER/IN
E12 9 HERMANN HOLGER LARS/IN

=> s e3
L21 13 "HERMANN HEINRICH"/IN

=> e konieczny peter/in
E1 4 KONIECZNY MIECZYSLAW/IN
E2 2 KONIECZNY PAWEŁ/IN
E3 4 --> KONIECZNY PETER/IN
E4 5 KONIECZNY STANISLAW/IN
E5 5 KONIECZNY TADEUSZ/IN

E6 2 KONIECZNY WILFRIED/IN
E7 1 KONIECZNY WITOLD/IN
E8 1 KONIECZNY ZBIGNIEW/IN
E9 1 KONIECZNY ZENON/IN
E10 1 KONIECZNY ZYGMUNT/IN
E11 1 KONIECZNY PETER/IN
E12 1 KONIECZNY DONALD L/IN

=> s e3
L22 4 "KONIECZNY PETER"/IN

=> e gebauer jurgen/in
E1 1 GEBAUER JULIS/IN
E2 6 GEBAUER JURAJ/IN
E3 0 --> GEBAUER JURGEN/IN
E4 1 GEBAUER K/IN
E5 1 GEBAUER KAREL/IN
E6 12 GEBAUER KARL/IN
E7 1 GEBAUER KATHRIN/IN
E8 15 GEBAUER KLAUS/IN
E9 1 GEBAUER KLAUS HEINRICH/IN
E10 1 GEBAUER KLAUS PETER DIPL ING/IN
E11 11 GEBAUER LUDWIG/IN
E12 1 GEBAUER M/IN

=> e gebauer j/in
E1 4 GEBAUER HORST/IN
E2 2 GEBAUER INGO/IN
E3 1 --> GEBAUER J/IN
E4 1 GEBAUER JAN/IN
E5 3 GEBAUER JOZSEF/IN
E6 5 GEBAUER JUERGEN/IN
E7 1 GEBAUER JULIS/IN
E8 6 GEBAUER JURAJ/IN
E9 1 GEBAUER K/IN
E10 1 GEBAUER KAREL/IN
E11 12 GEBAUER KARL/IN
E12 1 GEBAUER KATHRIN/IN

=> s e5 and e3
3 "GEBAUER JOZSEF"/IN
1 "GEBAUER J"/IN
L23 0 "GEBAUER JOZSEF"/IN AND "GEBAUER J"/IN

=> d his

(FILE 'HOME' ENTERED AT 13:12:34 ON 12 AUG 2009)
FILE 'CAPLUS' ENTERED AT 13:12:49 ON 12 AUG 2009
L1 1 S US20080242900/PN

FILE 'REGISTRY' ENTERED AT 13:13:10 ON 12 AUG 2009
FILE 'CAPLUS' ENTERED AT 13:13:18 ON 12 AUG 2009
L2 TRA L1 1- RN : 8 TERMS

FILE 'REGISTRY' ENTERED AT 13:13:18 ON 12 AUG 2009
L3 8 SEA L2

FILE 'CAPLUS' ENTERED AT 13:16:12 ON 12 AUG 2009
FILE 'REGISTRY' ENTERED AT 13:16:19 ON 12 AUG 2009

L4 0 S 121-14-3
L5 1 S 121-14-2
L6 1 S 606-20-2
L7 1 S 25321-14-6
L8 1 S 1321-12-6

FILE 'CAPLUS' ENTERED AT 13:17:37 ON 12 AUG 2009
L9 209 S L5/PREP
L10 123 S L6/PREP
L11 151 S L7/PREP
L12 368 S L9 OR L10 OR L11
L13 368 DUP REMOV L12 (0 DUPLICATES REMOVED)
L14 368 S L13
L15 153 S L13 AND L7
L16 49 S L15 AND NITRIC
L17 32 S L16 AND SULFURIC
L18 24 S L17 AND PY<=2005
E JOHANNES BUTTNER/IN
E BUTTNER JOHANNES/IN
L19 1 S E3
E MACKENROTH WOLFGANG/IN
L20 28 S E3
E HERMANN HEINRICH/IN
L21 13 S E3
E KONIECZNY PETER/IN
L22 4 S E3
E GEBAUER JURGEN/IN
E GEBAUER J/IN
L23 0 S E5 AND E3

=> s e5 or e3
3 "GEBAUER JOZSEF"/IN
1 "GEBAUER J"/IN
L24 4 "GEBAUER JOZSEF"/IN OR "GEBAUER J"/IN

=> s l19 or l20 or l21 or l22 or l24
L25 46 L19 OR L20 OR L21 OR L22 OR L24

=> s l25 and (l5 or l6 or l7)
3338 L5
1621 L6
1142 L7
L26 8 L25 AND (L5 OR L6 OR L7)

=> d l26 abs ibib hitstr 1-
YOU HAVE REQUESTED DATA FROM 8 ANSWERS - CONTINUE? Y/(N):y

L26 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
AB The invention relates to a process for treating wastewaters by the nitration of aromatic compds. to give mono-, di- and trinitroaroms. which have a pH of 7-13 by heating the wastewaters to temps. of 150 to 350 °C at a pressure of 10-300 bar to achieve thermolysis, characterized in that, before the heating, the nitroarom. compds. which do not contain a hydroxyl group, dissolved in these wastewaters, are removed from the wastewaters by extraction

ACCESSION NUMBER: 2009:258546 CAPLUS
DOCUMENT NUMBER: 150:289599
TITLE: Process for treating nitration wastewaters
INVENTOR(S): Fritz, Ruediger; Buetner, Johannes; Zoellinger, Michael; Merten, Anne-Kathrin; Hendel, Harald; Hermann, Heinrich; Haendel, Mirko; Gebauer, Hans-Juergen

PATENT ASSIGNEE(S): BASF SE, Germany
SOURCE: PCT Int. Appl., 16pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| WO 2009027416 | A1 | 20090305 | WO 2008-EP61185 | 20080827 |
| W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BE, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| PRIORITY APPLN. INFO.: | | | EP 2007-115290 | A 20070830 |
| IT 25321-14-6P, Dinitrotoluene | | | | |
| RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); REM (Removal or disposal); PREP (Preparation); PROC (Process) (process for treating nitration wastewaters by stripping followed by thermolysis) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1-Me

2 [D1-NO₂]

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
AB A method for manufacture aromatic amines from nitroarom. comprises hydrogenating nitrocompounds in the presence of a catalyst containing 0.01 - 5 weight% an active component such as Ni, Pd and ≥1 other metal such as Co, Fe (or other metals) supported on an activated carbon, carbon black, graphite or metal oxides. Thus, a catalyst containing 0.80 weight% Pd, 13 weight% Ni and 0.93 weight% Sn supported on an activated carbon (Norit SX+) was used for manufacture toluenediamine by hydrogenating dinitrotoluene in a 300 mL reactor at 180° and H₂ pressure 25 bar with selectivity 98.47%.
ACCESSION NUMBER: 2008:1397920 CAPLUS

DOCUMENT NUMBER: 149:578105
 TITLE: Method for producing amines by catalytic hydrogenating nitrocompounds
 INVENTOR(S): Coelho Tsou, Joana; Schwab, Ekkehard; Kubanek, Petr;
 Mackenroth, Wolfgang; Oehlenschlaeger,
 Steffen; Voss, Hartwig; Neto, Samuel
 PATENT ASSIGNEE(S): Basf Se, Germany
 SOURCE: PCT Int. Appl., 17pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----------------------------|--|----------|-----------------|------------|
| WO 2008138784 | A1 | 20081120 | WO 2008-EP55447 | 20080505 |
| W: | AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,
FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | |
| RW: | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,
IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK,
TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| PRIORITY APPLN. INFO.: | | | EP 2007-107893 | A 20070510 |
| IT 25321-14-6 | Dinitrotoluene | | | |
| RL: | RCT (Reactant); RACT (Reactant or reagent)
(producing aromatic amines by catalytic hydrogenating nitrocompounds) | | | |
| RN 25321-14-6 | CAPLUS | | | |
| CN Benzene, methyldinitro- | (CA INDEX NAME) | | | |



D1-Me

2 [D1-NO₂]

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
 AB Aromatic amines are prepared by catalytic hydrogenation of the appropriate
 nitro compds., e.g., toluene diamine produced by hydrogenation of
 dinitrotoluene, wherein the hydrogenation catalysts comprise a mixture of
 platinum, nickel and an addnl. metal and a carrier.
 ACCESSION NUMBER: 2007:223999 CAPLUS
 DOCUMENT NUMBER: 146:276465
 TITLE: Production of aromatic amines by catalytic

INVENTOR(S): hydrogenation of nitro compounds
 Kubanek, Petr; Schwab, Ekkehard; Van Laar, Frederik;
 Mackenroth, Wolfgang
 PATENT ASSIGNEE(S): BASF A.-G., Germany
 SOURCE: Ger. Offen., 9pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------------|------------|
| DE 102005041532 | A1 | 20070301 | DE 2005-102005041532 | 20050831 |
| WO 2007025884 | A1 | 20070308 | WO 2006-EP65478 | 20060821 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN,
MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ,
UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM | | | | |
| EP 1924355 | A1 | 20080528 | EP 2006-778285 | 20060821 |
| R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| JP 2009506091 | T | 20090212 | JP 2008-528464 | 20060821 |
| CN 101252987 | A | 20080827 | CN 2006-80031556 | 20080228 |
| US 20080242537 | A1 | 20081002 | US 2008-65285 | 20080229 |
| KR 2008040021 | A | 20080507 | KR 2008-706946 | 20080321 |
| IN 2008CN01585 | A | 20081128 | IN 2008-CN1585 | 20080331 |
| PRIORITY APPLN. INFO.: | | | DE 2005-102005041532A | 20050831 |
| | | | WO 2006-EP65478 | W 20060821 |

OTHER SOURCE(S): CASREACT 146:276465
 IT 25321-14-6, Dinitrotoluene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (production of aromatic amines by catalytic hydrogenation of nitro compds.)
 RN 25321-14-6 CAPLUS
 CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

2 [D1-NO₂]

toluene with nitric acid in the presence of sulfuric acid to give nitrotoluene; (B) separating the reaction product of step (A) into a nitrotoluene-containing organic phase and a sulfuric acid-containing aqueous phase; (C)

nitrating the nitrotoluene-containing organic phase with nitric acid in the presence of sulfuric acid to give dinitrotoluene; and (D) separating the reaction product of step (C) into a dinitrotoluene-containing organic phase and a

sulfuric-acid containing aqueous phase. The reaction product of step (A) contains

3.0-8% of toluene, in relation to the organic phase, and 0.1-1.2% of nitric acid, in relation to the aqueous phase and the phase separation of step (B) is carried out in such a manner that further reaction of toluene with nitric acid is prevented. Process flow diagrams are presented.

ACCESSION NUMBER: 2005:811729 CAPLUS

DOCUMENT NUMBER: 143:213353

TITLE: Two-stage nitration method for producing dinitrotoluene from toluene

INVENTOR(S): Buettner, Johannes; MacKenroth, Wolfgang;
Hermann, Heinrich; Konieczny, Peter;

Gebauer, Juergen

PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany

SOURCE: PCT Int. Appl., 23 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------------|------------|
| WO 2005075407 | A1 | 20050818 | WO 2005-EP1017 | 20050202 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG | | | | |
| DE 102004005913 | A1 | 20050825 | DE 2004-102004005913 | 20040205 |
| EP 1713756 | A1 | 20061025 | EP 2005-701305 | 20050202 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS | | | | |
| CN 1918109 | A | 20070221 | CN 2005-80004228 | 20050202 |
| BR 2005007293 | A | 20070703 | BR 2005-7293 | 20050202 |
| JP 2007520512 | T | 20070726 | JP 2006-551789 | 20050202 |
| US 20080242900 | A1 | 20081002 | US 2006-586683 | 20060720 |
| ZA 2006007374 | A | 20080625 | ZA 2006-7374 | 20060904 |
| KR 2006130203 | A | 20061218 | KR 2006-718074 | 20060905 |
| IN 2006CN03216 | A | 20070706 | IN 2006-CN3216 | 20060905 |
| PRIORITY APPLN. INFO.: | | | DE 2004-102004005913A | 20040205 |
| | | | WO 2005-EP1017 | W 20050202 |

OTHER SOURCE(S): CASREACT 143:213353

IT 25321-14-6P, Dinitrotoluene

RL: EPR (Engineering process); IMF (Industrial manufacture); PEP
(Physical, engineering or chemical process); PREP (Preparation); PROC
(Process)

(two-stage nitration method for producing dinitrotoluene from toluene)

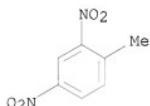
RN 25321-14-6 CAPLUS
CN Benzene, methyldinitro- (CA INDEX NAME)



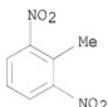
D1-Me

2 [D1-NO₂]

IT 121-14-2P, 2,4-Dinitrotoluene 606-20-2P,
2,6-Dinitrotoluene
RL: SPN (Synthetic preparation); PREP (Preparation)
(two-stage nitration method for producing dinitrotoluene from toluene)
RN 121-14-2 CAPLUS
CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)



RN 606-20-2 CAPLUS
CN Benzene, 2-methyl-1,3-dinitro- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
AB A method is described for the production of aromatic amines (e.g., diaminotoluenes) from aromatic nitro compds. (e.g., dinitrotoluenes) in the presence of supported (e.g., activated carbon) nickel-platinum alloy hydrogenation catalysts with the atomic ratio between nickel and platinum in the alloy ranging between 30:70 and 70:30, resp.
ACCESSION NUMBER: 2005:371208 CAPLUS
DOCUMENT NUMBER: 142:431969
TITLE: Method for the production of aromatic amines from aromatic nitro compounds in the presence of supported nickel-platinum alloy hydrogenation catalysts

INVENTOR(S): Van Laar, Frederik; Schwab, Ekkehard; Oehlenschlaeger,
 Steffen; Voss, Hartwig; Mackenroth, Wolfgang
 ; Morgenschweis, Konrad; Penzel, Ulrich; Weidner,
 Bernd
 PATENT ASSIGNEE(S): BASE Aktiengesellschaft, Germany
 SOURCE: PCT Int. Appl., 18 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|-------------|
| WO 2005037768 | A1 | 20050428 | WO 2004-EP11642 | 20041015 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG | | | | |
| DE 10349095 | A1 | 20050519 | DE 2003-10349095 | 20031017 |
| EP 1678118 | A1 | 20060712 | EP 2004-790484 | 20041015 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | |
| CN 1867538 | A | 20061122 | CN 2004-80030516 | 20041015 |
| CN 100364957 | C | 20080130 | | |
| JP 2007508348 | T | 20070405 | JP 2006-534705 | 20041015 |
| US 20070149814 | A1 | 20070628 | US 2006-575924 | 20060414 |
| KR 2007007762 | A | 20070116 | KR 2006-708988 | 20060509 |
| US 20080177111 | A1 | 20080724 | US 2008-57617 | 20080328 |
| US 7468461 | B2 | 20081223 | | |
| PRIORITY APPLN. INFO.: | | | DE 2003-10349095 | A 20031017 |
| | | | WO 2004-EP11642 | W 20041015 |
| | | | US 2006-575924 | A3 20060414 |

OTHER SOURCE(S): CASREACT 142:431969
 IT 25321-14-6, Dinitrotoluene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method for production of aromatic amines from aromatic nitro compds. in
 presence
 of supported nickel-platinum alloy hydrogenation catalysts)
 RN 25321-14-6 CAPLUS
 CN Benzene, methyldinitro- (CA INDEX NAME)



D1—Me

2 [D1—NO₂]

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
AB The invention relates to a method for producing amines by catalytically hydrogenating nitroaroms, and then separating the catalysts from the reaction mixture containing at least one aromatic amine and water. According to the inventive method, the catalysts are separated by means of membrane filtration which is carried out at a pressure of 5 to 50 bar on the side of the suspension, a difference in pressure between the side of the suspension and the side of the permeate of at least 0.3 bar, and a flow rate of 1 to 6 m/s on the side of the suspension.

ACCESSION NUMBER: 2003:633639 CAPLUS

DOCUMENT NUMBER: 139:179876

TITLE: Catalyst separation in the production of aromatic amines

INVENTOR(S): Vanoppen, Dominic; Schwab, Ekkehard; Van Laar, Frederik; Voss, Hartwig; Oehlenschlaeger, Steffen; Mackenroth, Wolfgang; Morgenschweis, Konrad; Penzel, Ulrich; Weidner, Bernd

PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany

SOURCE: PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

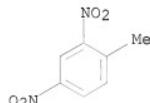
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2003066571 | A1 | 20030814 | WO 2003-EP924 | 20030130 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KE, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 2003218967 | A1 | 20030902 | AU 2003-218967 | 20030130 |
| EP 1474378 | A1 | 20041110 | EP 2003-714720 | 20030130 |
| EP 1474378 | B1 | 20050907 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| CN 1628091 | A | 20050615 | CN 2003-803309 | 20030130 |

| | | | | |
|----------------|-------------|----------------|----------|--|
| CN 1312108 | C 20070425 | | | |
| AT 303984 | T 20050915 | AT 2003-714720 | 20030130 | |
| JP 2006508017 | T 20060309 | JP 2003-565946 | 20030130 | |
| US 20050177003 | A1 20050811 | US 2004-500862 | 20040720 | |
| US 7091383 | B2 20060815 | | | |

PRIORITY APPLN. INFO.: DE 2002-10204700 A 20020206
WO 2003-EP924 W 20030130

OTHER SOURCE(S): CASREACT 139:179876
IT 121-14-2, 2,4-Dinitrotoluene
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalyst separation in the production of aromatic amines)
RN 121-14-2 CAPLUS
CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN
AB Aromatic nitro compds. in wastewaters are decomposed at pH 7-14 and 150-350° at 10-300 bar when ≥1 of the nitro compds. does not have a hydroxyl group on the aromatic ring. The method is suitable for treating wastewaters from manufacture of nitrobenzene, nitrotoluene, and dinitrotoluene.

ACCESSION NUMBER: 1999:667832 CAPLUS
DOCUMENT NUMBER: 131:262071

TITLE: Method for decomposition of aromatic nitro compounds in wastewaters

INVENTOR(S): Papkalla, Thomas; Baur, Karl Gerhard; Langensiepen, Hans-Werner; Mackenroth, Wolfgang

PATENT ASSIGNEE(S): BASF A.-G., Germany

SOURCE: Ger. Offen., 6 pp.
CODEN: GWXXBX

DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|----------|
| DE 19815844 | A1 | 19991014 | DE 1998-19815844 | 19980408 |
| EP 953546 | A2 | 19991103 | EP 1999-106138 | 19990406 |
| EP 953546 | A3 | 20000202 | | |
| EP 953546 | B1 | 20040922 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO | | | | |
| JP 11319800 | A | 19991124 | JP 1999-98946 | 19990406 |
| CN 1231997 | A | 19991020 | CN 1999-106294 | 19990408 |
| CN 1170776 | C | 20041013 | | |

PRIORITY APPLN. INFO.: DE 1998-19815844 A 19980408

IT 25321-14-6, Dinitrotoluene
RL: MSC (Miscellaneous); REM (Removal or disposal); PROC (Process)
(method for decomposition of aromatic nitro compds. in wastewaters)
RN 25321-14-6 CAPLUS

CN Benzene, methyldinitro- (CA INDEX NAME)



D1-Me

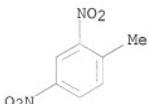
2 [D1- NO₂]

IT 121-14-2, 2,4-Dinitrotoluene 606-20-2,
2,6-Dinitrotoluene

RL: REM (Removal or disposal); PROC (Process)
(method for decomposition of aromatic nitro compds. in wastewaters)

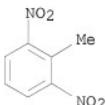
RN 121-14-2 CAPLUS

CN Benzene, 1-methyl-2,4-dinitro- (CA INDEX NAME)



RN 606-20-2 CAPLUS

CN Benzene, 2-methyl-1,3-dinitro- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD

(2 CITINGS)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2009 ACS on STN

AB Crude dinitrotoluene from nitration of toluene or mononitrotoluene, after separation of nitrating acid, is extracted with a countercurrent stream of dilute aqueous solution of HNO₃, H₂SO₄ and HNO₂ in a multistage process where the volume ratio of dinitrotoluene to aqueous solution is 1:3 to 10:1, and the aqueous extract is recycled to the nitrating process, directly or after concentration (e.g., to 65% HNO₃). Approx. 98% of the HNO₃ and HNO₂ in the crude dinitrotoluene are removed.

ACCESSION NUMBER: 1996:676109 CAPLUS

DOCUMENT NUMBER: 125:304516
 ORIGINAL REFERENCE NO.: 125:56913a, 56916a
 TITLE: Nitric acid, sulfuric acid and nitrous acid removal,
 recovery and recycling in nitrating of toluene or
 mononitrotoluene
 INVENTOR(S): Hermann, Heinrich; Gebauer, Juergen
 PATENT ASSIGNEE(S): Josef Meissner GmbH & Co., Germany
 SOURCE: Eur. Pat. Appl., 6 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|------------|
| EP 736514 | A1 | 19961009 | EP 1996-104233 | 19960316 |
| EP 736514 | B1 | 20010620 | | |
| R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, PT, SE | | | | |
| DE 19512114 | A1 | 19961010 | DE 1995-19512114 | 19950404 |
| DE 19512114 | C2 | 20000427 | | |
| US 5756867 | A | 19980526 | US 1995-529100 | 19950915 |
| AT 202333 | T | 20010715 | AT 1996-104233 | 19960316 |
| IN 187139 | A1 | 20020209 | IN 1996-CA475 | 19960318 |
| CA 2173381 | A1 | 19961005 | CA 1996-2173381 | 19960403 |
| CA 2173381 | C | 20070626 | | |
| CN 1145893 | A | 19970326 | CN 1996-105960 | 19960403 |
| CN 1085656 | C | 20020529 | | |
| PL 187688 | B1 | 20040930 | PL 1996-313631 | 19960404 |
| PRIORITY APPLN. INFO.: | | | DE 1995-19512114 | A 19950404 |
| IT 25321-14-6P, Dinitrotoluene | | | | |
| RL: IMF (Industrial manufacture); PUR (Purification or recovery); PREP (Preparation) | | | | |
| (nitric acid, sulfuric acid and nitrous acid removal, recovery and recycling in nitrating of toluene or mononitrotoluene) | | | | |
| RN 25321-14-6 CAPLUS | | | | |
| CN Benzene, methyldinitro- (CA INDEX NAME) | | | | |



D1-Me

2 [D1-NO₂]

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD
 (8 CITINGS)

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 LOGOFF? (Y)/N/HOLD:y

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FILE 'CAPLUS' ENTERED AT 13:13:18 ON 12 AUG 2009
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D L3
D L3 1-

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FILE 'REGISTRY' ENTERED AT 13:16:19 ON 12 AUG 2009
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L5 1 SEA FILE=REGISTRY SPE=ON PLU=ON 121-14-2
D
L6 1 SEA FILE=REGISTRY SPE=ON PLU=ON 606-20-2
D
L7 1 SEA FILE=REGISTRY SPE=ON PLU=ON 25321-14-6
D
L8 1 SEA FILE=REGISTRY SPE=ON PLU=ON 1321-12-6
D

FILE 'CAPLUS' ENTERED AT 13:17:37 ON 12 AUG 2009
L9 209 SEA FILE=CAPLUS SPE=ON PLU=ON L5/PREP
L10 123 SEA FILE=CAPLUS SPE=ON PLU=ON L6/PREP
L11 151 SEA FILE=CAPLUS SPE=ON PLU=ON L7/PREP
L12 368 SEA FILE=CAPLUS SPE=ON PLU=ON L9 OR L10 OR L11
L13 368 DUP REMOV L12 (0 DUPLICATES REMOVED)
L*** DEL 368 S L9 OR L10 OR L11
L*** DEL 368 S L9 OR L10 OR L11
L14 368 SEA FILE=CAPLUS L13
L15 153 SEA FILE=CAPLUS SPE=ON PLU=ON L14 AND L7
L16 49 SEA FILE=CAPLUS SPE=ON PLU=ON L15 AND NITRIC
L17 32 SEA FILE=CAPLUS SPE=ON PLU=ON L16 AND SULFURIC
L18 24 SEA FILE=CAPLUS SPE=ON PLU=ON L17 AND PY<=2005
D L18 ABS IBIB HITSTR 1-
E JOHANNES BUTTNER/IN
E BUTTNER JOHANNES/IN
L19 1 SEA FILE=CAPLUS SPE=ON PLU=ON "BUTTNER JOHANNES"/IN
E MACKENROTH WOLFGANG/IN
L20 28 SEA FILE=CAPLUS SPE=ON PLU=ON "MACKENROTH WOLFGANG"/IN
E HERMANN HEINRICH/IN
L21 13 SEA FILE=CAPLUS SPE=ON PLU=ON "HERMANN HEINRICH"/IN
E KONIECZNY PETER/IN
L22 4 SEA FILE=CAPLUS SPE=ON PLU=ON "KONIECZNY PETER"/IN
E GEBAUER JURGEN/IN
E GEBAUER J/IN
L23 0 SEA FILE=CAPLUS SPE=ON PLU=ON "GEBAUER JOZSEF"/IN AND
"GEBAUER J"/IN
L24 4 SEA FILE=CAPLUS SPE=ON PLU=ON "GEBAUER JOZSEF"/IN OR
"GEBAUER J"/IN
L25 46 SEA FILE=CAPLUS SPE=ON PLU=ON L19 OR L20 OR L21 OR L22 OR
L24
L26 8 SEA FILE=CAPLUS SPE=ON PLU=ON L25 AND (L5 OR L6 OR L7)
D L26 ABS IBIB HITSTR 1-
COST IN U.S. DOLLARS SINCE FILE TOTAL

| | | |
|--|---------------------|-------------------|
| FULL ESTIMATED COST | ENTRY
218.34 | SESSION
273.99 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE
ENTRY | TOTAL
SESSION |
| CA SUBSCRIBER PRICE | -26.24 | -26.24 |

STN INTERNATIONAL LOGOFF AT 13:25:38 ON 12 AUG 2009